CHAPTER 13

IMPROVING THE NUTRITIONAL STATUS OF CHILDREN THROUGH GROUP FEEDING

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Widespread, severe malnutrition in young children is recognized as the major nutritional disease in Ghana and probably the world today. As early as 1933 the disease syndrome labelled *kwashiorkor* was described in the then Gold Coast by Cecil Williams.[1] Since then major emphasis on malnutrition in children has been provided by surveys summarized in Table 1. Two other studies have been made but the reports were not available when the above summary was being made.[2] Partly as a result of the report of Platt and Mayer in 1958,[3] the National Food and Nutrition Board was set up to be in charge of a nationwide nutrition education programme. How effective this programme has been is not known since nobody has yet evaluated the work. There is evidence though that the malnutrition problem still exists, especially among children.

This paper discusses group feeding schemes as a means of improving the nutritional status of children and why centres which take care of pre-schoolers should be appropriate for the schemes.

Different peoples of the world have similar nutritional requirements which they satisfy through a variety of diets. The Ewes have their akple, Ashantis fufu, Italians spaghetti and Chinese rice. Children acquire a taste for the foods to which they are accustomed. This is true whether the diet is good or poor, particularly in Ghana where the average child has hardly any say in what he eats except what he buys. So that children's dietary patterns are very much closely connected with food attitudes, family social status and economic background. In a recent study of three communities of different ethnic origins and socio-economic backgrounds near Legon, the meal patterns of the lower primary school children used in the study were very dependent on the family circumstances.

Children for the most part eat what their parents like and can afford, and if studies have proved that this food is not always adequate then agencies like schools have the opportunity to reach all these children and have teachers prepared in the methods of guiding children's food habits. Teachers have the opportunity to create situations which promote good food habits and this should be used to alleviate the problem.

When the child enters school, he already has a well-developed pattern of eating based on food habits which have been laid in his home but I believe the school can play a distinctive role in the nutritional welfare of the children, especially the younger ones. I am thinking more particularly of nursery schools.

In Ghana institutions which take care of pre-schoolers are the nurseries under the Ministry of Social Welfare and Community Development and nursery schools under the Ministry of

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TABLE 1

NUTRITION STUDIES CONDUCTED IN GHANA

1955-1962

Investigator, Group and Regions Investigated		*Year*	*Number of Households or People*	*Nutrients Found to be Low in the Diet*
Grant	Village in forest (Children)	1955	4 households	Calories, protein, all vitamins except A and C, minerals, especially iron
	Town on edge of forest		3 households	As above
	Coastal village		4 households	Calories, proteins, all vitamins and minerals
	Accra		1 household	Calcium and riboflavin
Platt and Mayer	Nationwide	1958	Not stated	Protein, vitamin A, anemias (cause not given)
Davey	Nationwide (Children birth to 24 months)	1961	43,000	Protein, calories
	Children: 1-4 years	1962	66	Protein, iron and calcium
	Forest, urban areas		692 persons	Riboflavin
	Northern, fishing vill.		520 persons	Vitamin A
	North and forest		719 persons	Calories
	Nationwide—pregnant women	1962	953 persons	General undernutrition
	North—adults	1962	3,722 persons	Vitamin A, calories, general undernutrition

Education. Some kind of meals are served in these centres, either breakfast, lunch or mid-morning and mid-afternoon snacks. These meals if served effectively could help the children to know or enjoy those foods which meet their nutritional needs. To quote Martin in Robert'

Nutrition Work with Children: "There is no better way to accomplish this than to provide them (the children i.e.) day after day with well-prepared, good tasting meals which meet these needs. By so doing, children are not only benefited nutritionally, but they are also subjected to a subtle but effective and lasting type of nutrition education."[4]

Learning to know what to eat and why, is an essential aspect of a child's education. This is one way to give him the opportunity to make the most of his abilities and to help him prepare to assume responsibiltiy for his own health. He must come to know, at the appropriate learning level for him, that nutrition makes a difference in growth, fitness, endurance, prevention and recovery from disease, appearance, body performance and even in length of life. Children do not instinctively choose the foods they need for good nutrition; they have to be guided, and there is no better place and time to do it than at the group day care centres. The objectives of the day care centres support this idea, and I quote from a recent paper distributed to members of the Ghana National Council on Social Welfare by the Department of Social Welfare:

"1. To provide proper care and supervision for pre-school children of working mothers.
2. To provide stimulus towards the all round development of the children through activities appropriate to their needs and capabilities.
3. To strengthen family life through parents' education as part of the Day Care programme."

According to the same paper quoted above, there are over 300 such day care centres with 20,000 children in both urban and rural areas throughout the country so that under proper supervision they could be a useful tool in the establishment of desirable food habits in pre-schoolers.

The Lunch

Whereas snacks are helpful, the noon lunch is the most effective measure to improve the nutritional status of children especially those from underprivileged homes for whom a square meal is a rarity. It could provide at least a third of the day's nourishment. Rested, happy children who play outdoors are usually ready to eat a hearty meal. The general principles for feeding children at home apply to group feeding, i.e. serve tasty, attractive, nutritionally adequate meals in a calm environment, with the children comfortably seated, and using suitable dishes and eating utensils, with the food offered in expectation that it will be enjoyed.

Participation in preparing or serving the meal often helps to create interest in food and eating, especially with older pre-school children. Going to market to buy the vegetables, helping to shell groundnuts or to peel them when they are roasted, peeling plantain, setting the table, bringing out utensils or merely being in the kitchen watching the preparation, create an interest in the meal and put children in a frame of mind ready for their meals.

In feeding any group of children there are certain guidelines which can be helpful. All initial servings of foods should be small with the understanding that more is available if wanted. If a child feels that he can eat what is on his plate he is encouraged to eat. Portions of new and less popular foods should be introduced gradually and served sparingly, e.g. maize dishes are not very popular in the forest areas. However their nutritional value is higher than the plantain and starchy roots which children in this area are accustomed to eating. There is no better place to introduce these foods than the group day care centres but they should be served in small portions at first. Foods should be prepared in such a way that they are not too difficult for young

children to manage. In some of these centres food is served in such chunky wholes, especially yams and cocoyams, that the children give up eating because it takes too much effort to break it into manageable portions. The food should either be cut into suitable sizes before cooking or it should be cut when served to the children, especially for the younger ones.

Between-Meal Snacks

In a few places the children spend the whole day at the centre. In such situations snacks may be necessary. The time to serve should depend largely on the spacing of the regular meals. If a child has an early breakfast at home or did not have any at all as often happens, he will need food before the noon lunch is served. This may take the form of a supplementary breakfast on arrival at the centre or it may be a small piece of fresh fruit at mid-morning. The food should be served at the same time daily, always sufficiently early, and be of such a nature that it will not interfere with the appetite for the noon meal. Then there is the mid-afternoon snack just before the children go home. It may be somewhat more substantial than the mid-morning one because of the comparatively long period before the evening male. Here, too, fresh fruit or groundnuts will be suitable. The supplementary feedings together with the main meal at school should supply nutrients lacking in the majority of home meals.

Davey in his 1960–62 survey found evidence for certain specific shortcomings in the patterns of nutrient intake for particular areas and groups. Here I am quoting from Pauline Whitby's review of the above report:

"(*a*) The calorie intake of people in farming villages is inadequate for even moderately heavy work, except over short periods.

(*b*) Protein deficiency: attention has been drawn to the fact that the areas of general protein shortage (as distinct from the protein deficiency of infants and young children, which is encountered in all parts of the country) is in the forest zone and the coastal plain.

(*c*) Deficiency of Vitamin A in Northern Ghana: This deficiency is a cause of blindness and of lesser eye damage. It is also believed to be a predisposing factor in river-blindness which is common in the area.

(*d*) Deficiency of riboflavin: Nutrient intake data suggest that this vitamin is in short supply everywhere in Ghana. Signs suggesting riboflavin deficiency can in fact be seen in every part of the country, though not as common or severe as the intake data might perhaps suggest.

(*e*) Vitamin C shortage in Northern Ghana: While outright scurvy is not common, dietary intakes of Vitamin C in the Northern and Upper Regions are well below optimum".

(See Table 2 below from the same source.)

The above then can be a sort of guide for planning meals for the different regions.

Functions of the School Lunch

The school lunch programme, be it in a regular school or in a group day care centre should serve certain functions:

1. To provide a noon meal for children and teachers that is nutritionally adequate, tasty and satisfying.

Table 2

PERCENTAGE OF NUTRIENT REQUIREMENTS FULFILLED IN THE DIET OF VARIOUS CLASSES OF COMMUNITY

(Number of Communities shown in Brackets)

	Calories	*Prot.*	*Ca.*	*Fe.*	*Vit. A*	*Thi.*	*Rfn.*	*Nic.*	*Vit. C.*
Fishing villages (4)	78	124	58	121	216	117	53	137	198
Kedzi (3)	90	141	70	104	270	103	45	158	171
Coastal plain villages (4) ...	70	83	57	72	176	98	39	96	149
Accra	81	156	62	100	335	96	52	159	120
Forest Villages									
Western Region (2)	109	145	95	117	405	117	60	183	253
Central Region (3)	68	93	55	84	194	82	43	107	177
Eastern Region (1)	71	83	68	95	368	100	43	105	250
Volta Region (2)	61	69	49	68	124	81	31	86	188
Volta R., Akaa only (1) ...	70	76	50	73	203	96	36	100	226
Brong Ahafo Region (1) ...	73	89	69	92	62	125	43	126	246
Mean (11)	75	95	65	92	203	97	45	118	199
Mean omitting Western Region (9)	67	86	53	86	165	93	41	103	188
Forest Towns									
Eastern Region (2)	76	94	56	86	254	103	45	128	215
Ashanti Region (2)	80	107	84	115	269	107	55	159	173
Brong Ahafo Region (1) ...	88	122	64	113	201	167	73	162	287
Mean	80	105	68	103	249	117	54	147	212
Northern Region Villages (4)...	110	170	64	190	34	247	75	167	61
Damongo (1)	77	98	53	108	18	147	44	130	48
Upper Region vill. (3) ...	80	137	60	196	43	178	77	151	44
Bolgatanga (1)	106	186	116	270	67	204	101	214	91
Household Budget Surveys									
Sekondi-Takoradi	85	110	77	117	293	86	46	127	292
Kumasi	100	132	117	155	162	123	60	178	274
Akuse	80	118	60	83	268	94	41	118	181
Cocoa farmers:									
Oda-Swedru	88	95	69	109	200	120	41	123	376
Ashanti-Brong Ahafo ...	90	114	87	145	122	161	57	159	358

(Intakes which are less than 75% of theoretical requirements underlined).
(Taken from "A Review of Information Concerning Food Consumption in Ghana," P. Whitby, p. 16).

In most group day care centres in Ghana the food that the children eat is left largely to the supervisors or the attendants of the centre. There are no guidelines or specifications. I have observed in some centres in rural Ghana that the children are fed what they bring from home, and I mean the raw food that they bring. You can see the children going to school in the morning carrying their plantain, cocoyams, kontomire (one leaf usually), etc. The attendant then makes a meal out of these for the children. It is supposed to be "an indirect way of teaching mothers about the preparation of balanced meals for their families".

Some centres are fortunate to receive some food items like yellow corn, wheatena and skim milk from agencies which give food as aid. Years ago when I worked as a Nutrition Officer, these foods were very poorly utilized. I remember when I visited a centre in Ada Foah, these foods instead of being prepared at the centre for the children, were shared for them to take home. Ada Foah is a very sandy place and the children invariably spilled some of this in the sand, collected it back into their bowls and so on. The situation might have improved over the years, but it certainly was most unsatisfactory at the time. The most common practice though is for the children to pay a monthly fee which goes towards their care and food. Here, too, supervisors are free to feed what they think fit and they do the best with the resources at their disposal.

Money is very much a limiting factor in the feeding of the children in day care centres. However, there ought to be a definite diet pattern which meets certain specifications for nutritional adequacy. This should be followed particularly in the government or state-owned centres. In Ghana a pattern can be worked out based on the six classes of Ghanaian foods. In the United States a school lunchroom which operates under the government's National School Lunch Programme, serves a "Type A" plate lunch, a pattern worked out by Dr Lydia J. Roberts, an eminent nutritionist who did a great deal of work with children[5]. A lunch based on this pattern in the U.S.A. meets certain specifications for nutritional adequacy. In Ghana the pattern will vary and the cost should be kept low. Even though low, it is doubtful that the average Ghanaian could afford to pay for such an adequate meal but I believe government subsidy for such a venture would be worthwhile. In addition it should be possible to utilize the services of the Home or Agriculture Extension worker to promote local production of nutritious foods, and the organization of a kitchen garden to serve some of the needs of day care centres. This is one of the problems of programme development but good feeding programmes could lay the foundations for healthy, robust citizens. If the proper presentations were made through the ministries or departments responsible for these centres and the subsidy being given now were increased substantially, more nutritionally adequate lunches could be provided.

The diet pattern should suggest quantities of the different food groups to be served an individual child. Such a pattern would help attendants or supervisors to have a concrete objective and also a guide. The cost of the lunch should be such that the majority of children could afford to pay for it. It is assumed that the meal service would be run on a non-profit basis. Of course it cannot be anything else, with a government subsidy. Parents, however, should bear part of the responsibility by paying something nominal towards not only the food but also the care and keep of the child in the centre.

2. The second function of a lunch at school is to help children grow socially and emotionally. Conditions under which meals are served sometimes leave a lot to be desired. The food is served to the children and nobody bothers to see whether the children's hands are clean. Sometimes each grabs her bowl and starts eating just anywhere, perhaps on the ground, not any different

from what takes place in most homes. School conditions should not be too different from that of the home but certainly there ought to be some improvements, otherwise going to school becomes unnecessary.

Learning experiences in social behaviour, table talk, cleanliness and other health habits, and self-discipline can be provided during meal times. The extent to which these experiences are favourable ones depends largely on the physical factors that control the environment of the lunchroom. The lunchroom should be clean, pleasant, well ventilated and reasonably quiet. Children should be relaxed to enjoy the lunch period.

Merely eating together makes a major contribution to the social and emotional development of children. The experience is enriched for young children when their teacher has her lunch with them. She sets an example in enjoyment of her lunch, in tasting and reacting favourably to foods new to the children, in table manners, in quiet discussion, and in courtesy. The children should be able to eat in their classroom in familiar surroundings, and where many suitable learning situations may be developed.

The older children can be given some responsibility in the running of the lunch. As already mentioned, they can help in the actual procurement of the meals. During meal times, too, they can have some duties like clearing tables, or supervising the conduct of a table, or even helping to stage some simple entertainment. Such tasks require planning, making decisions, completing tasks and assuming responsibilities. These are the elements of social and emotional growth.

3. The third function of a school lunch is to extend educational influence to the home of the children. According to the paper already quoted: "Each Day Care Centre has a Parent Association comprising parents of the children in a particular Day Care Centre". This is a means of involving parents in the programme and also a channel for educating parents on child development needs of children, their health, feeding, etc. So you see, provision has already been made in the philosophy and mode of operation of Day Care Centres for this extension of school influence. Public health workers could also co-operate in the school lunch programme and use it as the pivot for their nutrition education programmes.

Parents should know the types of food and appropriate quantities that children need in a day. They should know what extent the school lunch attempts to meet these needs and what should be included in home meals to complete the day's food requirements. All this can be done in groups like the Social Welfare and Community Development's groups or the women's groups in the various churches. Parents on the other hand may aid the project by giving information on family food practices and customs which the school can take into consideration in planning meals and preparing meals for the school lunch.

If properly encouraged, parents may give support in the form of needed equipment, services like helping prepare and serve food. It is hoped that parents will have a positive attitude towards the lunch programme, give active support to its educational aims and make an effort to serve nourishing meals and to encourage good food habits at home.

4. The school lunch provides the educational basis and experience for forming good food habits. The school lunch provides an effective tool for teaching nutrition. At the nursery school level this will be very informal and incidental. If the lunch experience is enjoyable and the food is satisfying, and if at the same time the meal is nutritionally adequate, the child has received indirectly a practical sort of nutrition education. With older children in elementary schools, the lunch can be used as a phase of the school nutrition programme to teach food values and meal selection, the lunch then becomes a direct force for good nutrition[6].

Conclusion

Nursery schools form an important part of the government's proposed educational system. If the present ones could be helped to provide nutritionally adequate meals, the foundation would be laid for the new ones to come. I hope the social workers, nutritionists and others concerned with the welfare of families (of which children form an important part) will give the matter a thought. The programme calls for co-operation.

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